ADDITIONS AND NOMENCLATURAL CHANGES IN THE FLORA OF SOUTHERN FLORIDA — I.

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The purpose of this paper is to validate certain nomenclatural changes, and to record additions and certain taxonomic reinterpretations in the vascular flora of southern Florida. These changes and additions have resulted from preliminary studies that have been part of the preparation of a manual of the flora of tropical Florida. The flora of southern Florida is a rich one for so small an area (Long, Lakela, and Broome, 1969), and it was of special interest to J. K. Small. Numerous nomenclatural and taxonomic revisions have been necessary, but it will not be possible to report here all the changes from names used by Small in his manuals dealing with this flora (1903, 1913a, 1913b, and 1933). Other additions or changes requiring validation may be necessary as work progresses; the present paper includes references only for certain dicotyledonous families.

RANUNCULACEAE

Clematis

The populations of *Clematis baldwinii* are highly variable in peninsular Florida, where the species is endemic, but two recognizable morphological extremes occur. These are separable on the basis of sepal length and leaf shape, but they are connected by morphologically intermediate plants. Gray (1895) made reference to the broad leaf form of *C. baldwinii* but did not name it. Erickson (1943) placed the species in his monotypic subsect. Baldwinianae, sect. Viorna, separated from its apparent nearest relative the western

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C. fremontii S. Wats. which has all leaves simple and ovate to orbicular in shape.

Additional field work and an analysis of population variability would be very desirable in *C. baldwinii*. A possible third variety characterized by very small flowers, sepals less than 2 cm long and with linear leaves, occurring on the white sand scrub of central Florida and extending into southern Florida, may also deserve varietal recognition. It is possible that var. *latiuscula* may represent hybrids with broad leaf forms of *C. crispa* L. or *C. reticulata* Walt., or may even represent remnants of wholly different population systems.

Sepals 3-4 cm long; leaves mostly linear to narrowly lanceolate. .... *C. baldwinii* var. *baldwinii*

Sepals 4-5.5 cm long; leaves mostly elliptic-lanceolate to narrowly ovate. ..... *C. baldwinii* var. *latiuscula*

CLEMATIS BALDWINII var. BALDWINII T. & G., Fl. N. Am. **1:** 8. 1838.

Viorna baldwinii Small, Fl. SE. U. S. 439, 1331, 1903.

DADE CO.: east boundary Everglades National Park, Dec. 23, 1955, *F. C. Craighead* and *L. E. Arnold, s.n.* (GH); HILLSBOROUGH CO.: northwest of Tampa near junction of Waters street and Hulsey road, May 19, 1962, *O. Lakela* 25969 (GH, USF); LEE CO.: occasional erect in pine-palmetto flatwoods 10 mi wsw Salvista, May 13, 1958, *R. Kral* 6542 (GH); POLK CO.: partly cleared pineland close to RR tracks, just off Lakeland city limits, infrequent, March 12, 1961, *O. Lakela* 23836 (GH, USF).

CLEMATIS BALDWINII var. **latiuscula** R. W. Long, var. nov.

A typo differt foliis integris; lamina ovato-attenuata, 7.5-8.0 cm longa, 2.0-2.4 lata, breviter petiolata; supera folia sessilia; lamina manifeste palmatim trinervis, reticulata; sepala longa 5.0-5.4 cm, lata 6-8 mm; pedunculi 18-22 cm longi, nudiusculi.

TYPE, LEVY CO. FLA. In low, open pineland, S 34, T 16S, R 16E, April 25, 1959, *G. R. Cooley* 6549 and *R. J. Eaton*. In Gray Herbarium, isotype in USF.

CITRUS CO.: 2 mi w Sumter Co. line on hwy 48 between Bushnell and Floral City on shoulder of road and edge of wood, April 29, 1958, *G. Cooley* 6069, *C. Wood* and *K. Wilson* (GH, USF); HENDRY CO.: near

Goodno, hammock, April 8, 1940, *D. E. Eyles* 6819 (GH); HILLSBOROUGH CO.: sand barren beyond Ballast Point, W. Tampa, May 30, 1923, *J. R. Churchill s. n.* (GH); SARASOTA CO.: Sarasota, Dec. 25, 1942, *A. E. Perkins, s. n.* (GH); VOLUSIA CO.: Port Orange, May 13, 1895, *F. C. Straub* 145 (GH).

POLYGALACEAE

Polygala

The genus is well-represented in southern Florida by 17 species and a number of infraspecific taxa. Several are endemic to the limestone soils that support pineland and hammock vegetation. *Polygala boykinii*, for example, includes three well-marked varieties in southern Florida, two of which are endemic. They may be separated as follows:

1. Lower-most leaves elliptic-obovate to suborbicular, often mucronate.
   2. Leaf-blades elliptic-obovate, upper blades linear. ..... *P. boykinii* var. *boykinii*
   2. Leaf-blades suborbicular, upper blades usually narrowly lanceolate. ..... *P. boykinii* var. *suborbicularis*
1. Lower-most leaves subulate to linear or linear-lanceolate. ..... *P. boykinii* var. *sparsifolia*

POLYGALA BOYKINII var. BOYKINII Nutt. Jour. Acad. Phil. 7: 86. 1834.

Pinelands, Fla. to La, Ga.

HILLSBOROUGH CO.: along country road from 30th st. and Skipper Ave., low seasonally wet, weedy roadside, June 17, 1962, *O. Lakela* 25131 (USF); MONROE CO.: low area near Fla 94, Pinecrest, ca 6 mi w of Dade-Monroe county line T54S, R 34 E, Dec. 29, 1959, *D. B.* and *S. S. Ward* 1176 (USF).

POLYGALA BOYKINII var. **suborbicularis** R. W. Long, var. nov.

A typo differt foliis infernis suborbicularibus 0.8-1.4 cm longis, 0.6-0.8 cm latis, superis foliis anguste lanceolatis raro linearibus, 0.9-1.2 longis, 0.3-0.5 cm latis.

TYPE, LEE CO. FLA. Pinewoods, 10 mile camp, near Everglades, March 23-26, 1905, *A. A. Eaton* 1384. In Gray Herbarium.

HERNANDO CO.: west of Weeki Wachee springs, frequent, March 19, 1958, *G. R. Cooley* 5650 and *J. Monachino* (GH, USF); LEE CO.: vicinity of Fort Myers, in hammock, April 3, 1916, *Jeanette P. Standley* 129 (GH) (A smaller leaf-form but similar to the type); MONROE CO.: Big Pine Key in limerock outcropping under *Pinus elliottii* and *Sabal palmetto*, May 3, 1958, *G. Cooley* 6195, *et al.* (GH, USF).

POLYGALA BOYKINII var. SPARSIFOLIA Wheelock, Mem. Torr. Club 2: 121. 1891.

TYPE, MONROE CO., FLA. Coral soil, Cudjoe Key, *A. H. Curtiss, s.n.* (Isotype, GH!).

P. praetervisa Chodat, Mem. Soc. Phys. Genève 31(2): 140. 1891.

P. flagellaris Small, Bull. N. Y. Bot. Gard. 3: 427. 1905 (p.p. incl. type).

P. sparsifolia Small, Fl. SE. U. S. 686, 1333. 1903.

Endemic to extreme southern peninsular Florida and the Florida Keys, this is perhaps the most distinctive variety in the species.

DADE CO.: Everglades National Park near Homestead, Miami oolite and solution holes, hammock and pineland association, Oct. 16, 1962, *G. Cooley* 9410, *et. al.* (GH, USF) (Intermediate form to typical variety); MONROE CO.: Big Pine Key, pine-palm woods, May 24, 1952, *W. B. Robertson* 274 (GH); Big Pine Key, pineland, April 19, 1942, *C. E.* and *M. S. Eyles* 8201 (GH); Big Pine Key, pinewoods, Feb. 21, 1936, *E. P. Killip* (GH).

A second species that includes two endemic varieties in Florida is *Polygala grandiflora*. Small described a number of endemic species from this complex that may be referred to one or the other of the varieties described below.

1. Wings greenish or purplish-tinged.
   2. Leaf blades elliptic or elliptic-lanceolate. ..... *P. grandiflora* var. *grandiflora*
   2. Leaf blades linear or linear-lanceolate. ..... *P. grandiflora* var. *angustifolia*
1. Wings dark purple. ..... *P. grandiflora* var. *leiodes*

POLYGALA GRANDIFLORA var. GRANDIFLORA Walt., Fl. Car. 179. 1788.

P. cumulicola Small, Bull. Torr. Bot. Club 51: 381. 1924.

P. miamiensis Small, in Blake, N. Am. Fl. 25(5): 340. 1924.

Small stated that *P. cumulicola* differs from *P. grandiflora* in having deep-rose purple wings and a short raceme, which is true (isotype GH!). Additional study may warrant recognition of this race as a variety of *P. grandiflora*, however at present these characters do not seem to mark a definite

taxon within the species sufficiently to necessitate taxonomic recognition.

POLYGALA GRANDIFLORA var. ANGUSTIFOLIA T. & G., Fl. N. Am. 1: 671. 1840.

P. grandiflora var. *leptophylla* Chodat, Mem. Soc. Phys. et Hist. Nat. Genèv. **31**: 57. 1893.

P. corallicola Small, Bull. N. Y. Bot. Gard. 3: 425. 1905.

POLYGALA GRANDIFLORA var. LEIODES Blake, N. Am. Fl. **25**: 339. 1924.

P. grandiflora var. *grandiflora* is found throughout a number of the Southeastern states, but *P. grandiflora* var. *angustifolia* and *P. grandiflora* var. *leiodes* are generally confined to extreme southern Florida and the West Indies.

EUPHORBIACEAE

Croton

Six species occur in southern Florida, and the most variable of these is *Croton glandulosus*, a wide-spread tropical weed species that includes two varieties endemic to the dry pinelands. The typical variety appears to be more common in the maritime sands suggesting ecotypic separation of the varieties. However, *C. glandulosus* var. *glandulosus* may be found in various sites, as pinelands, old fields, sandy soil, and disturbed sites. The varieties may be separated as follows:

1. Calyx and fruit pubescent.
   2. Leaf blades stellate-pilose on both surfaces, margins serrate to dentate. ..... *C. glandulosus* var. *glandulosus*
   2. Leaf blades densely stellate-pubescent on both surfaces, margins crenate-serrate. ..... *C. glandulosus* var. *simpsonii*
1. Calyx and fruit smooth or nearly so. ..... *C. glandulosus* var. *floridanus*

CROTON GLANDULOSUS L. var. GLANDULOSUS

COLLIER CO.: beach area of Marco Island, off US 92; construction site with destruction of native vegetation, July 1, 1967, *O. Lakela* 30839 (USF); vicinity of Naples, recently cleared weedy sandlot with *Centrosema, Euphorbia, Cassia,* weed in vacant lot, Oct. 9, 1962, *G. R. Cooley* 8990, *R. Eaton,* and *O. Lakela* (USF); DADE CO.: sandy beach, Key Biscayne, Nov. 2, 1965, *F. C. Craighead* (USF); HIGHLANDS

CO.: frequent in grove by SAL RR, 2.1 m n. of Sebring on US alt 27, T 34S, R 29E, June 8, 1964, *D. Burch* 384 (USF); PALM BEACH CO.: w. side of Dreher Park, West Palm Beach, disturbed ground, sand, full sun, 7 dm tall, Aug. 29, 1967, *Paul Cassen* 180 (USF).

CROTON GLANDULOSUS var. SIMPSONII Ferg., Rep. Mo. Bot. Gard. **12:** 51. 1901.

BREVARD CO.: Melbourne Beach, n of park area, with escaped cultigens, June 7, 1964, *O. Lakela* 27206A (USF); DADE CO.: pineland associated with *Acalypha, Neptunia, Schrankia,* pubescence coarse, Old Cutler Road, near Deering Hammock, July 17, 1964, *O. Lakela* 27275 (USF).

CROTON GLANDULOSUS var. **floridanus** (Ferg.) R. W. Long, stat. nov.

C. floridanus Ferguson, Rep. Mo. Bot. Gard. **12:** 50, pl. 15. 1901.

This variety is readily separable from the other ones by means of the glabrous or nearly glabrous sepals of the pistillate flowers, and glabrous fruits. All populations of *C. glandulosus* in southern Florida appear to be distinct from the northern and central Florida *C. glandulosus* var. *septentrionalis* Muell. Arg.

COLLIER CO.: under trees, Vanderbilt Beach, n Naples, leeward side of dunes, Sept. 8, 1967, *O. Lakela* 31069, (USF); Marco Island, beach area; plants frequent in sandy openings, Sept. 27, 1964, *O. Lakela* 27509 (USF); MANATEE CO.: Anna Maria Island, coastal dunes and white sand beaches, Jan. 15, 1967, *R. W. Long* 2367, *R. Broome, C. Croley* (USF); MONROE CO.: Murray Key, Florida Bay off Flamingo, open drier site with salt grasses and succulents, May 8, 1965, *O. Lakela* 28599, *R. W. Long,* and *F. Craighead;* PINELLAS CO.: Fort DeSoto Park, s end, capsules glabrous, Sept. 10, 1963, *R. Thorne, R. Long, O. Lakela* 26282 (USF).

MYRTACEAE

Myrcianthes

The two species of *Myrcianthes* reported as endemic for Florida (Wilson, 1961) are very probably merely local variants of *M. fragrans,* a wide-ranging species in the American tropics. They differ from the typical form chiefly in having slightly longer petioles and by producing cymes usually 7-flowered instead of 3-flowered. However, there

is some justification for maintaining *M. simpsonii* because the cymes are several-flowered, usually 10-14; this would then be our only endemic variety of *M. fragrans*. There is less justification for maintaining *M. dicrana*, and it is therefore placed in synonomy under the typical variety.

MYRCIANTHES FRAGRANS (Sw.) McVaugh — Shrubs or trees up to 20 m tall, usually less, with reddish-brown or light-brown bark. Leaves narrowly obovate to elliptic-cuneate 1-8 cm long, acute or obtuse, pale green above, slightly paler beneath. Flowers in cymes with 3-14 flowers; sepals about 1-2 mm long, corolla about 1 cm wide. Berry globose or ellipsoidal. Hammocks, s Fla, tropical Amer.

Corolla less than 1 cm wide, cymes usually 3-7 flowered. ..... var. *fragrans*

Corolla over 1 cm wide, cymes several flowered, usually 10-14. ..... var. *simpsonii*

MYRCIANTHES FRAGRANS (Sw.) McVaugh var. FRAGRANS, Fieldiana: Bot. 29: 485. 1963.

Anamomis dicrana Britton, Britton and Shafer, N.A. Trees, 728, *fig. 668*. 1908. (*Eugenia dicrana* Berg.)

DADE CO.: Everglades, Paradise Key, May 5, 1908, *E. A. Bessey* (A); Everglades National Park near Long Pine Key, 5½ miles w, 2 m n of Paradise Key, altitude 6 ft. in hammock in pinewoods, limerock with pockets of soil in cracks, considerable organic litter, assoc. with *Ficus brevifolia, Metopium toxiferum, Rapanea, Dipholis*, tree up to 7 ft. irregularly branched, April 22, 1958, *A. Traverse* 586 (GH); INDIAN RIVER CO.: near Vero Beach, abundant in dense scrub; scrub or tree up to 6 m tall, bark flaky, brownish; galled fruits orange, July 2, 1949, *L. J. Brass* 20582 (GH).

MYRCIANTHES FRAGRANS var. **simpsonii** (Small) R. W. Long, comb. nov.

Anamomis simpsonii Small, Torreya **17**: 222. 1917.

Myrcianthes simpsonii (Small) K. A. Wilson, Jour. Arnold Arb. **41**: 276. 1961.

DADE CO.: Arch Creek, May 1918, *C. J. Simpson* (A); hammock along Arch creek, May 12, 1917, *J. K. Small* 8287 (GH); MONROE CO.: North Key Largo ca 3 m from left turn of US I, coral limestone, *Sweitenia, Gouania, Dalbergia*, 4 m high, Oct. 13, 1962, *G. R. Cooley* 9293, *J. R. Eaton, O. Lakela* (GH, USF).

PLUMBAGINACEAE

Limonium

Two Limoniums have been described from Florida material: *L. carolinianum* (Walt.) Britt. var. *angustata* A. Gray, and *L. nashii* Small. In his monograph Blake stated that *L. carolinianum* has a glabrous calyx and deltoid-obtuse lobes. Gray based his variety (type, GH!) on the narrowness of the leaves. Small described *L. nashii* as having pubescent calyx lobes, at least at the base; *L. trichogonum* Blake supposedly has still more strongly pubescent calyx. Finally, to complicate further the taxonomy is *L. obtusilobum* (type, GH!) supposedly with a shorter calyx that is pilose-pubescent. Blake stated that the chief characters for specific discrimination in *Limonium* were pubescence, size and form of calyx and shape of the calyx lobes, shape of flowering bractlets, and aggregation of flowers.

Ahles incorrectly reduced *L. obtusilobum* to a variety of *L. carolinianum*. The former is characterized by a line of pubescence along the sepal and is hirsute on the blunt-shaped sepals; the latter species is entirely glabrous and is so characterized. Ahles then made *L. carolinianum* var. *angustata*, which was originally characterized by narrowness of the leaves, a variety of *L. nashii*, a species that was originally based on a sparingly pubescent calyx tube.

The aggregation of flowers is a poor character for separating taxa because there is continual variation from one extreme to another. Pubescence of the calyx is also unstable. After examination of type collections in GH and of collections from southern Florida, it is apparent that only two varieties of *L. carolinianum* are worthy of recognition: *L. carolinianum* var. *angustata* (Gray) Blake representing a narrow leaf, dwarfish race endemic to the Florida Keys and southern peninsular Florida, and *L. carolinianum* var. *carolinianum* the larger more robust race.

Leaves lanceolate-elliptic to obovate-spatulate; floral internodes less than 5 mm long. ..... var. *carolinianum*

Leaves linear-lanceolate to narrowly elliptic; floral internodes about 5 mm long. ..... var. *angustatum*

LIMONIUM CAROLINIANUM (Walt.) Britt. var. CAROLINIANUM

L. nashii Small, Bull. Torr. Bot. Club **24**: 491. 1897.
L. trichoganum Blake, Rhodora **18**: 61. 1916.
L. nashii var. *trichoganum* Blake, Rhodora **25**: 58. 1923.
L. carolinianum var. *nashii* (Small) Boiv. Nat. Canad. **93**: 643. 1966.

LIMONIUM CAROLINIANUM var. ANGUSTATUM (A. Gray) Blake, Rhodora **25**: 56. 1923.

Statice brasiliensis var. *angustatum* A. Gray, Synopt. Fl. N. Amer. 2(1) : 54. 1878.
L. angustatum (A. Gray) Small, Bull. Torr. Bot. Club **24**: 488. 1897.
L. obtusilobum Blake, Rhodora **18**: 63. 1916.
L. carolinianum var. *obtusilobum* (Blake) Ahles, Journ. Elisha Mitch. Sci. Soc. **80**: 173. 1964.
L. nashii var. *angustatum* (A. Gray) Ahles, Journ. Elisha Mitch. Sci. Soc. 80: 173. 1964.

TYPE: Pine Key. Blodgett. In Gray Herbarium!

LEE CO.: on wet mucky soil of mangrove swamp, Bokeelia Island, Dec. 31, 1956, *R. Kral* 3901 (GH); MONROE CO.: Big Pine Key, saline flats south of Inn, Dec. 29, 1953, *E. P. Killip* 43400 (GH); PINELLAS CO.: salt flats, Snug Harbor, Nov. 14, 1959, *R. K. Godfrey* 59192 (GH).

SAPOTACEAE

Bumelia

The United States species of *Bumelia* were revised by Clark (1942) and later by Cronquist (1945). *Bumelia angustifolia* was described by Nuttall from a tree that was common in Key West according to Blodgett. It has leaves unusually small and narrow linear-oblong and obtuse, with the blade 2.5-3.0 cm long and up to 1 cm wide that come out in clusters from the center of the preceding bud. Nuttall was the first to recognize the distinctiveness of this race. All specimens seen of this taxon occur in southern Florida, and apparently it is endemic to the lower Florida Keys and the Cape Sable area. *Bumelia celastrina* var. *celastrina* also occurs in this area but not nearly so commonly, al-

though it is abundant farther north in peninsular Florida. The two races intergrade although the extremes are easily distinguished. *B. celastrina* var. *angustifolia*, with its much reduced, narrower leaves, appears to be a distinct ecotype adapted to coastal hammocks and pinelands.

The type for *B. celastrina* (photo, GH!) is from Mexico and is of a large-leaved plant with blades 3-4 cm long. Possibly, Cronquist drew broad, inclusive circumscriptions that incorporate many otherwise distinctive races, and probably population structure is considerably more complex than his treatment would infer. Certainly the Florida Keys race is morphologically separable from the typical variety.

BUMELIA CELASTRINA H.B.K. Trees or shrubs up to 8 m tall with glabrous stems. Leaves evergreen, fascicled, blades oblanceolate to oblanceolate-spatulate, 1-4 cm long, glabrous. Flowers few-several in axillary cymes or umbels; calyx lobes 2 mm long, ovate, corolla 3-4 mm wide, lateral lobes irregularly toothed; staminodia 2-3 mm long, lacerate. Styles 2.5-4 mm long. Berry cylindrical 7-13 mm long.

Leaf blades oblanceolate to spatulate 2-4 cm long, slightly pubescent when young. ..... var. *celastrina*

Leaf blades linear-oblong, obtuse, mostly 1-2 cm long, glabrous when young. ..... var. *angustifolia*

BUMELIA CELASTRINA var. **angustifolia** (Nutt.) R. W. Long, stat. nov.

Bumelia angustifolia Nutt., N. Am. Sylva 3: 38, *pl. 93.* 1849.

CHARLOTTE CO.: Boca Grande, golf links, small tree, Jan. 20, 1920, *J. S. Ames* (A); DADE CO.: East Cape, Nov. 1912, *C. T. Simpson* (A); 2 mi e of Cape Sable, Nov. 1912, *C. T. Simpson;* MONROE CO.: Summerland Key, July 2, 1956, *C. K. Brizicky* 355, & *W. L. Stern* (A); Little Torch Key, hammock, tree 15-18 ft high, 7 in. dbh, June 29, 1956, *G. K. Brizicky* 344 & *W. L. Stern,* (A); Big Pine Key, small tree 10 ft high, 3 in diam, dry pinelands near Myrtle and Wesley's place, June 22, 1956, *G. K. Brizicky* and *W. L. Stern.*

LOGANIACEAE

Cynoctonum

Three species, including one new one, occur in southern

Florida, and they may be distinguished as follows:

Leaf blades narrowly lanceolate to ovate-orbicular, sessile. ..... 1. *C. sessilifolium*

Leaf blades narrowly lanceolate to ovate-lanceolate or ovate, short-petioled.

Lower leaves ovate-lanceolate or ovate, fleshy, larger blades tending to cluster at the base in a rosette; inflorescence mostly 2-4 cm long. ..... 2. *C. succulentum*

Lower leaves lanceolate to elliptic or ovate, not clustered at the base; inflorescence mostly 4-6 cm long. ..... 3. *C. mitreola*

1. CYNOCTONUM SESSILIFOLIUM (Walt.) J. F. Gmel.

Three varieties are present in southern Florida:

1. Leaf blades elliptic to ovate or orbicular.
   2. Leaf blades mostly 2-4 cm long, apex obtuse. ..... var. *sessilifolium*
   2. Leaf blades mostly 1-1.5 cm long, apex acute. ..... var. *microphyllum*
1. Leaf blades narrowly lanceolate. ..... var. *angustifolium*

CYNOCTONUM SESSILIFOLIUM var. SESSILIFOLIUM.

Ditches, low ground, wet places, a coastal plain plant, Fla to La, Tex, and Va. Widely distributed in Fla.

CYNOCTONUM SESSILIFOLIUM var. **microphyllum**, R. W. Long, var. nov.

A typo differt caule simplici, foliis sessilibus, parvulis, 1-1.5 cm longis, pro parte maxima minus quam 1 cm longis, apicis acutis; laminis ellipticis vel late lanceolatis; inflorescentiis aliquot ramosis, ramis minus quam 2 cm longis per anthesin.

TYPE: BREVARD CO. FLA.: 4 miles west of Melbourne, occasional on moist sandy peat of pine flatwoods; flowers white. August 22, 1958, *R. Kral* 7961. In Gray Herbarium, isotype in USF.

Stems simple, leaves sessile, small, the blades 1-1.5 cm long, mostly less than 1 cm long with acute to broadly acute apex; blades elliptic to broadly lanceolate, inflorescence few-branched, the branches less than 2 cm long at flowering.

FLORIDA: CALHOUN CO.: grassy swamps, Sept. 1, 1889, *Chapman Herb.* 2824[a] (GH); CITRUS CO.: 5 mi s Homosassa; frequent on moist sandy peat of clearing near cypress dome, August 10, 1958, *R. Kral* 7764 (GH, USF); DADE CO.: Miami, July 1877, *A. P. Garber* (GH);

DUVAL CO.: Baldwin, August 6, 1895, *G. V. Nash* (GH); INDIAN RIVER CO.: 7 mi. west of Vero Beach, frequent on moist sandy peat of grass-sedge bog, August 29, 1957, *R. Kral* 5587 (GH, USF); LEE CO.: around flatwood ponds, Ft. Myers, July-Aug. 1900, *A. S. Hitchcock* 214 (GH); LEVY CO.: along Rt. 24, 3 mi southwest of Otter Creek, sandy soil along highway right-of-way, Sept. 13, 1954, *R. E. Perdue Jr.* 1732 (GH); MONROE CO.: Key West, *Blodgett* (GH); OSCEOLA CO.: pond on prairie, Aug. 4, 1903, *A. Fredholm* 5947 (GH).
GEORGIA: DOUGLAS CO.: acid bog-meadow 2 mi e of Villa Rica, flowers white, July 27, 1948, *A. Cronquist* 5563 (GH).
LOUISIANA: BEAUREGARD PARISH: wet sandy soil along shallow ditch about 10 mi south of De Ridder, July 21, 1938, *D. S.* and *H. B. Correll* 9673 (GH); VERNON PARISH: 2 mi. w of Leander, grassy field with wet areas from springs; woody vegetation removed except for a few pines, frequent, flowers white, July 7, 1950, *G. L. Webster* and *R. L. Wilbur* 3235 (GH).
MISSISSIPPI: JACKSON CO.: Ocean Springs, July 27, 1896, *C. L. Pollard* (GH).
NORTH CAROLINA: CARTARET CO.: savannah, at Newport, Aug. 6, 1938, *R. K. Godfrey* 5786 (GH).
TEXAS: HOUSTON CO.: Grapeland, sandy open bogs, Sept. 22, 1917, *E. J. Palmer* 12849 (GH).
SOUTH CAROLINA: HORRY CO.: Conway, savannah, Sept. 1, 1940, *P. O. Schallert* (GH).

This variety appears as rigidly erect, simple plants with much reduced leaves. In distribution it appears to be similar to that of the typical variety although it apparently is ecotypically adapted to wet, sandy or more often peaty soil, rather than the chiefly pineland habitat of the typical race. Both morphologically and ecologically it is readily separable from the other two varieties.

CYNOCTONUM SESSILIFOLIUM var. ANGUSTIFOLIUM T. & G.

Mitreola sessilifolia β angustifolia T. & G., Fl. N. Amer. 2: 45. 1841.

Cynoctonum angustifolium Small, Bull. Torr. Bot. Club 23: 129. 1896.

Wet soil, Fla to Ga on the coastal plain.

FLORIDA: DADE CO.: southwest of Homestead, Everglades National Park, oolite depressions, trailside, Oct. 16, 1962, *O. Lakela* and *F. C. Craighead* (USF); Everglades National Park, pinelands, plant reddish before drying, Oct. 12, 1962, *G. R. Cooley* 9223, *R. Eaton*, *J. Ray*, *R. Long*, and *O. Lakela* (USF); HERNANDO CO.: one mile n of Weeki

Wachee Springs, occasional on moist sandy pineland pond border, June 9, 1958, *R.* and *Mabel Kral* 6778 (USF).

2. **Cynoctonum succulentum,** R. W. Long, sp. nov.

Planta annua 2-4 dm alta, caulis simplex, raro ramosus super. Folia elliptica ad ovata, 3-5 cm longa, 1.5-2.0 lata, glabra, succulenta, infima rosulata, caulina folia vix demi-nuta, omnia petiolis brevissimis. Inflorescentia cyma ramosa spicis brevibus pro parte maxima 2-4 cm longis, dense secunda; sepala 0.5-0.75 mm longa, corolla 1-1.5 mm longa, bractea 1-1.5 mm longa paulatim decrescens, plerumque succulenta. Capsula plerumque mitriformis.

TYPE: In pine barrens, near Manatee, Florida, June 11, 1890, *J. H. Simpson.* In Gray Herbarium.

Annual herbs with smooth stems 2-4 dm tall, simple, seldom branched above. Leaves elliptic to ovate, 3-5 cm long, 1.5-2.0 cm wide, acuminate, smooth, succulent; lower leaves forming a basal rosette, petioled, upper stem leaves not much reduced in size, short-petioled or subsessile; stipules much reduced. Inflorescence a terminal, peduncled cyme, flowers spiked along one side of the branches, the branches usually 2-4 cm long, flowers densely arranged along the axis; sepals 0.5-0.75 mm long, corolla white, 1.0-1.5 mm long, somewhat funnel-form to urceolate; stamens 5, included; ovary 2-locular, styles 2, very short and fused at the tip to form a common stigma; bracts 1.0-1.5 mm long, gradually tapering, usually succulent. Capsule 3-4 mm long, exserted, somewhat mitriform, many- seeded. In drier sites, pinelands, less commonly in moist soil, glades, endemic to southern peninsular Florida.

COLLIER CO.: abundant on wet muddy edges of marsh; corolla white, East Henson Marsh, Feb. 14, 1946, *L. J. Brass* 15972 (GH); DADE CO.: Royal Palm Hammock, June 29, 1915, *J. K. Small, C. Mosier, G. Small* (GH); Everglades, 10 mi nw of Hialeah on route 27, common, associated with *Asclepias incarnata;* flowers white, August 24, 1951, *Grady Webster* 4237 (GH); glades south of Long Pine Key, not common, April 24, 1952, *W. B. Robertson, Jr.* 211 (GH); LEE CO.: vicinity of Fort Myers, in pineland, May 22, 1916, *Jeanette Standley* 200 (GH); PINELLAS CO.: sandy soil near Maximo point, St. Petersburg, Sept. 10, 1954, *R. F. Thorne* 15407 (GH).

Cynoctonum succulentum appears strikingly different from the related, widespread *C. mitreola* because of its thicker, more succulent leaves, the larger ones often clustered towards the base forming a rosette, and because the leaves have very short petioles, or are subsessile, the base almost truncate, and because of its more restricted inflorescence. Although *C. mitreola* (photo of type in GH!) is admittedly a highly variable species, its leaves are more often lanceolate, acute, and definitely petioled, and never clustered at the base; in addition, it is often branched near the top, and the inflorescence is usually widely branched. The leaves are membranous, and cymes often arise from the lower axils. The two species appear to be ecologically distinct: *C. succulentum* is found in pine barrens and drier soil more frequently than not, and *C. mitreola* is typically found in drainage ditches, swamps, and moist sites.

3. CYNOCTONUM MITREOLA (L.) Britt. Mem. Torr. Bot. Club 5: 258. 1894.

Low ground, wet places, Fla to Va, Ark, Mex, WI. This is the most common species of *Cynoctonum* in southern Florida, and is the most variable, particularly in leaf shape and size. Apparent hybrids with *C. sessilifolium* are found in Florida, also. In practice, these putative hybrids are usually referred to *C. mitreola*.

APOCYNACEAE

Urechites

The tropical genus *Urechites* is represented in the southern Florida flora by the extremely variable *U. lutea* (L.) Britt., a vine or scrambling shrub with bright green leaves and tubular yellow corollas. Two readily separable varieties can be identified, however, representing apparently ecotypically differentiated races:

Leaf undersurfaces, sepals, and follicles glabrous or barely pubescent. ..... var. *lutea*

Leaf undersurfaces, sepals, and follicles copiously pubescent. ..... var. *sericea*

URECHITES LUTEA (L.) Britt. var. LUTEA Bull. N. Y. Bot. Gard. 5: 316. 1907.

Twining vines, generally in hammocks, mangroves associations, southern Florida, Florida Keys, West Indies.

URECHITES LUTEA var. **sericea** R. W. Long, var. nov.

A typo differt foliis tomentosis vel quidem pilosissimis; calyce et pedunculis hirsutis, corollae tubo pilis mollibus.

TYPE: vicinity of La Valle, Tortue Island, Haiti. Twining on shrubs to height of 15 ft., flowers yellow, thicket east of harbor. Dec. 28, 1928, Jan. 9, 1929, *E. C.* and *G. M. Leonard* 11642. In Gray Herbarium.

Urechites jaegeri Muell.-Arg. Linnaea **30**: 444, 1860, pro parte.

Urechites pinetorum Small, Addisonia **4**: 21, *pl. 131*. 1919.

Differing from the typical variety by having leaves tomentose underneath, or at least thickly pubescent; calyx and peduncle hirsute, corolla tube with soft hairs; fruits covered with soft, silky pubescence.

The new variety is abundantly distinct, at least in southern Florida, and apparently in the West Indies; var. *sericea* frequently occurs in rocky often limestone soil, while var. *lutea* is found more frequently in moist soil. Morphological intermediates are found but they apparently are not common.

FLORIDA: DADE CO.: pinelands west of Coconut Grove, May 15, 1918, *J. K. Small* (GH); Coconut Grove, 1910, *Miss C. Rotham* (A); Homestead, pineland area between Homstead and Florida City near S. R. 27, June 4, 1966, *R. W. Long* 1674 (USF).

BAHAMAS: ANDROS ISLAND, near Niccols Town, in pine yards and along roadsides, June 14-16, 1965, *R. W. Long* 1367 (USF).

JAMAICA: ST. CATHERINE PARISH: Mt. Diablo, site of Blue mountain, August 21, 1965, *H. A. Hespenheide* 1379 (GH); Manchester, Red Mould Forest Reserve, s of Troy in open place, climber to 12 ft, corolla yellow, April 23, 1956, *W. T. Stern* 917 (GH); ST. ANN PARISH: Moneague, Jan. 23, 1952, *F. W. Hunnewell* 19786 (GH); limestone turn-around area alt. 1500, Minea area near Lydford p. o. Dec. 20, 1953, *R. A. Howard* and *G. R. Proctor* 13489 (GH); near Casteltou, June 26, 1915, *W. Harris* 12085 (GH).

CUBA: ISLE OF PINES, swamp about 2 km due n of Nueva Gerona, Mar. 18, 1953, *E. P. Killip*, 43140 (GH); Buenas Aires, in brushland, July 10, 1929, *F. M. Salvoza* (GH); Soledad, Cienfuegos, Aug. 4, 1927, *J. G. Jack* 5230 (GH); rocky pasture, Soledad Cienfuegos, Sept. 2, 1927, *J. G. Jack* 5413 (GH); Havana, camino del Morro,

Santiago de Cuba, June 1944, *Hno. Clemente*, 3689 (GH); Santa Clara, brushy field, July 13, 1936, *L. B. Smith, A. R. Hodgdon*, (GH); Oriente Province, Cerro de Miraflores, Cananova, July, 1942, *Hno. León* 21106 (GH).

HISPANIOLA: SANTO DOMINGO: in thickets, May 13, 1929, *E. L. Ekman*, 12453 (A); MONET CRISTI: semiscandent plant, elevated coral reefs near Rio Yaqee del Norte, Oct. 23-24, 1946, *R.* and *E. S. Howard* 9584 (GH).

CONVOLVULACEAE

Bonamia

Although Myint has pointed out that *Stylisma* and *Bonamia* may be separated by means of differences in the shape of cotyledons, otherwise the two genera are closely similar and there appears to be no sound reason for maintaining them as separate taxa. Intermediate species serve to form a continuous pattern of variation between the two groups.

BONAMIA **abdita** (T. Myint) R. W. Long, comb. nov.

Stylisma abdita T. Myint, Brittonia **18**: 107. 1966.

Stictocardia

A specimen of *S. tiliifolia* Hall. f. from Key West, Fla. in the Gray Herbarium suggests that this species may be naturalized in the Florida Keys or southern peninsular Florida. No other collections have been seen, however.

BORAGINACEAE

Heliotropium

Three heliotropes are found in southern Florida, *H. angiospermum* Murr., *H. curassavicum* L., and *H. polyphyllum* Lehm. The latter species is represented by two readily distinguished varieties:

Stems erect, often strict. ..... var. *polyphyllum*
Stems spreading-decumbent or prostrate. ..... var. *horizontale*

HELIOTROPIUM POLYPHYLLUM Lehm. var. POLYPHYLLUM in Neue Schr. Naturf. Ges. Halle iii, II, 9. 1817. including *H. polyphyllum* var. *leavenworthii* (Torr.) A. Gray, Proc. Amer. Acad. Arts & Sci. **10**: 49. 1874.

This is a tropical species that occurs in coastal areas, low

hammocks, and pineland in moist soil; var. *leavenworthii* is merely the form with yellow rather than white corollas, said to be "strict", but not appearing to be worthy of taxonomic distinction from the typical variety.

HELIOTROPIUM POLYPHYLLUM var. **horizontale** (Small) R. W. Long, stat. nov.

Heliotropium horizontale Small, Bull. N. Y. Bot. Gard. 3: 435. 1905.

TYPE: pinelands between Cutler and Camp Longview, Nov. 1903, Small & Carter 742 (NY, photo GH!)

DADE CO.: pinelands about Cox hammock, June 24, 1915, *J. K. Small* 6579, *C. Mosier*, and *G. Small* (GH); LEE CO.: Seacoast, Sanibel, July-Aug 1900, *A. S. Hitchcock* 221 (GH); MANATEE CO.: north end of Longboat Key near Long Beach, 15 miles nw of Sarasota, sprawling perennial herb in sand, corolla white with yellow center, Aug. 1, 1950, *R. L. Wilbur* and *G. L. Webster* 2510 (GH); PALM BEACH CO.: north of Palm Beach, suffruticose, 1-2 ft. corolla yellow, April 29, 1920, *Alfred Rehder* 853 (GH); PINELLAS CO.: Fort De Soto Park, Mullet Key, south of Gulfport, beaches north end of key, stems depressed, trailing, occasional, corolla white, Oct. 5, 1963, *O. Lakela* 26527 (GH, USF); SARASOTA CO.: Siesta Key, Anne E. Perkins, Jan. 28, 1943 (GH).

This variety appears to be a maritime ecotype distinguished by its prostrate spreading habit and apparent preference for habitats very near the coast in peninsular Florida where it is apparently endemic.

In addition to the three species cited, two other heliotropes may occur in southern Florida: *H. fruticosum* L. (*H. phyllostachyum* Torr., *H. myosotoides* Chap.) was collected by Blodgett at Key West, and later by Garber and by Palmer. No recent collections have been seen, however. *Heliotropium indicum* L. (*Tiaridium indicum* (L.) Lehm.), a hispid annual native to the Old World may occur in disturbed sites in southern Florida, but apparently it is uncommon.

VERBENACEAE

Lantana

Lantana ovatifolia Britt. is distinguished from other species in southern Florida by its unarmed stems and heads

with bracts not formed into an involucre. Two well-marked varieties occur although the typical one appears to be less common.

Stems erect; leaves up to 9 cm long. ..... var. *ovatifolia*
Stems decumbent or reclining; leaves up to 4 cm long. .. var. *reclinata*

LANTANA OVATIFOLIA var. OVATIFOLIA, Britton in Bull. N. Y. Bot. Gard. 4: 123. 1905.

TYPE: Eight mile Rocks, Grand Bahama, *Britton & Millspaugh* 2450 (NY).

DADE CO.: sand dunes near head of Indian creek, opposite Miami, Nov. 22, 1912, *J. K. Small* 3872 (GH); pinelands, Miami, May 8, 1930, *F. Duckett* (GH); LEE CO.: frequently flowers yellow, shrub 160 cm tall, May 11, 1954, *G. R. Cooley* 2674 (GH); PINELLAS CO.: five miles south of Port Richey, white sandy scrub bordering inlet from Gulf, slash pine, saw palmetto, scrub oaks, Aug. 1960, *J. D. Ray* 9988 (GH, USF).

LANTANA OVATIFOLIA var. **reclinata** R. W. Long, var. nov.

A typo differt ramis prostratis, foliis parvis, plerumque 1-4 cm longis fructu 2.5-3.5 mm longis.

TYPE: FLA. DADE CO.: Fuch's hammock, Homestead, corolla yellow, plant decumbent. *George R. Cooley* 9324, *R. J. Eaton, F. C. Craighead, O. Lakela*, Oct. 14, 1962. In Gray Herbarium, isotype in USF.

L. depressa Small, in Bull. N. Y. Bot. Gard. 3: 436. 1905.

Shrubs with reclining or decumbent stems, leaves mostly 1-4 cm long, elliptic to ovate, serrate, scabrous, pubescent beneath, fruit 2.5-3.5 mm long, pinelands, endemic to southern Florida.

DADE CO.: corolla yellow, leaves dark green above, open field, Homestead, Sept. 17, 1952, *J. Hardin, W. Humphrey, W. Duncan* 14049 (GH); pinelands about Sykes hammock, March 4, 1915, *J. Small* 5667, *C. Mosier, E. Small* (GH); rocky pinelands near Goulds, April 13, 1942, *D. E.* and *M. S. Eyles* 8082 (GH); low calcareous ground, 4 miles sw of Royal Palm hammock, May 22, 1925, *E. Palmer*, (GH); Brickell hammock, Miami, April 27, 1920, *A. Rehder* 811 (A); pinelands, Long Pine Key, common, April 14, 1952, *W. B. Robertson* 156 (GH).

In recognizing this *Lantana* Small noted that to him it differed from *L. camara* L. in producing prostrate unarmed

branches and smaller flowers. The plant appears to be more closely related to the West Indian species *L. ovatifolia* from which it differs chiefly in producing reclining or prostrate branches, smaller leaves and somewhat smaller fruits. It is apparently endemic to a very small portion of extreme southern Florida judging from collections.

RUBIACEAE

Ernodea

In Florida Small distinguished two species, *E. littoralis* Sw. and *E. angusta* Small, the latter separated by its supposedly narrower leaves, smaller flowers, and corolla pink or reddish rather than pinkish-white or white. Experience in the field suggests that the two taxa are connected by intermediates although they apparently are different ecotypes. The typical variety generally occurs in the coastal areas, in sandy or rocky soil, while var. *angusta* is more commonly found inland in pinelands and in drier sites. The two may be keyed as follows:

Leaf-blades linear oblong to elliptic, calyx mostly 7-8 mm long. ..... var. *littoralis*

Leaf-blades linear; calyx mostly 5-6 mm long. ..... var. *angusta*

ERNODEA LITTORALIS var. LITTORALIS Swartz, Prod. Veg. Ind. Oct. 29, 1788.

Corolla usually pinkish-white or white, coastal areas, southern Florida, Florida Keys, and West Indies.

ERNODEA LITTORALIS var. **angusta** (Small) R. W. Long, stat. nov.

E. angusta Small, in Bull. N. Y. Bot. Gard. 3: 438. 1905.

Corolla usually pink or reddish, usually less than 1 cm long, in pinelands, southern Florida Keys, and West Indies.

TYPE: FLORIDA, DADE CO.: in pinelands between Cutler & Camp Longview, Nov. 1903, *Small* 870 and *Carter* (NY).

DADE CO.: open sandy stretch of disturbed hammock and pineland, with remnants of original vegetation north of Post Office, Homestead; fruits shiny, orange, July 19, 1964, *O. Lakela* 27299 (GH, USF); small trailing shrub, flowers red, Coconut Grove, Jan. 26, 1932, *J. G. Jack* (A); open pinelands, limestone outcrop near Rockdale, May 22, 1925, *E. J. Palmer* 27511 (A); *Coconut Grove*, Feb. 3, 1933,

H. O'Neill 8158 (A); MONROE CO.: vicinity of Watson's hammock, edge of pinelands along roadside, scrambling shrub, fruits yellow, March 25, 1958, *W. L. Stern* 304 and *K. L. Chambers* (GH); Big Pine Key, Feb. 4, 1940, *R. J. Seibert* 1289 (A).

The relationship of *Ernodea*, a small genus of the West Indies principally in the Bahamas and Florida, with the Hispaniolan genus *Isidorea* A. Rich ex A. P. DeCandolle is apparent through intermediate species, such as *I. leonardii* Urban and *E. littoralis*. It is probable the two plants are congeneric, but until further field studies are made it is advisable to maintain the genera separately. Generally, the morphological variation of *Isidorea* appears to be broader than *Ernodea*, and could be further broadened to include the latter genus.

Spermacoce

Two species occur in southern Florida, *S. tenuior* var. *floridana* and *S. tetraquetra*. From examination of specimens, it appears doubtful that *S. tenuior* var. *tenuior* is present although it does occur in northern Florida. Our specimens are mostly procumbent or decumbent with small leaves, often 1-2 cm long, annual, and with smooth hypanthia. Typical *S. tenuior* plants have hirsute hypanthia and generally larger, more ovate or elliptic leaves (photo, type GH!). It appears, however, that the two varieties are connected by morphological intermediates. *Spermacoce tetraquetra*, our other species, is a distinctive form because of its generally larger habit, usually erect, and hirsute-white pubescent leaves and stems.

Stems and leaves glabrous or nearly so. .... *S. tenuior* var. *floridana*
Stems and leaves pubescent with whitish hairs. ..... *S. tetraquetra*

SPERMACOCE TENUIOR L. var. **floridana** (Urban) R. W. Long, stat. nov.

Spermacoce floridana Urban, Symb. Ant. 7: 550. 1913.
Spermacoce keyensis Small, Fl. Fla. Keys 141, 155. 1913.
Spermacoce floridana Gandoger, Bull. Soc. Bot. Fr. **65:** 35. 1918.
Spermacoce portoricensis A. Gray, Syn Fl. N. A. I(2): 34. 1884, non Balbis = *Hemidiodia ocimifolia*.

TYPE: in locis apertis arenosis Ins. Key West, Florida austr. *Rugel* 298, Feb. 1846 (isotype, GH!)

DADE CO.: waste ground, Dec. 15, 1902, *A. Fredholm* 5642 (GH); Miami, door yards, *A. H. Curtiss* 1109 (GH); MONROE CO.: hammocks, Key West, March 20, 1915, *J. K. Small* 5990 and *C. A. Mosier* (GH); Key West, Jan. 7, 1892, *J. H. Simpson* 477 (GH); Key West, Aug. 1877, *A. P. Garber* (GH); Key West in umbrosis, Ins. Key West, Florida austr, *Rugel*, Feb. 1846 (cited in original description), (GH).

SPERMACOCE TETRAQUETRA A. Rich.

DADE CO.: hammocks between Miami and Coconut Grove, Nov. 26-Dec. 20, 1913, *J. K. Small* 4667 and *G. K. Small* (GH); Everglades National Park, near Homestead in Miami oolite and solution holes, hammock and pineland association, hirsute hairs whitish, coarse, Oct. 16, 1962, *G. R. Cooley* 9404, *J. Eaton, F. Craighead* and *O. Lakela* (GH); in hammocks between Coconut Grove and Cutler, Nov. 13-23, 1903, *J. K. Small* 1207, *J. Carter* (GH).

CUCURBITACEAE

Melothria

The variation of *Melothria pendula* in Florida is particularly difficult to understand taxonomically. Small described two new species from collections by G. V. Nash, and both of them are obviously closely related to *M. pendula*. Cogniaux described several variants of *M. pendula* in his two monographs. In all instances leaf pubescence and texture, leaf blade and size and shape together with the morphology of the fruiting peduncles and fruit were all considered taxonomically important.

Variation of *M. pendula* in southern Florida is particularly complex. Our common plants are small, rough-leaved forms that can be referred to *M. pendula* var. *aspera*; forms with thick leaves and stout peduncles and large fruits are referrable to var. *crassifolia*; much less commonly found is the typical variety with large, thin, pubescent leaves. At this time it is not possible to identify any ecological differences between the varieties, and all are apparently connected by intermediates. The relationships may be seen in the following key:

1. Leaf blades thin, often 5-8 cm wide, hirtulous. ..... var. *pendula*
1. Leaf blades thicker, often 2-4 cm wide, scabrous or pubescent with thick stout hairs.

2. Leaf blades mostly 2-3 cm wide, very scabrous on both sides, deeply lobed; berries globose. ..... var. *aspera*
2. Leaf blades mostly 3-4 cm wide, rough pubescent, shallowly lobed; berries oblong. ..... var. *crassifolia*

MELOTHRIA PENDULA L. var. PENDULA

JACKSON CO.: vine, branches spreading on the ground and running up trunks of rough-barked trees; flood plain forest along Apalachicola River, w of Chattahoochee, Oct. 17, 1958, *R. K. Godfrey* 57835 (GH); LEE CO.: Ft. Myers, marshes, July-Aug. 1900, *A. S. Hitchcock* 107 (GH); PALM BEACH CO.: Jupiter Island, July 28, 1956, *G. Cooley* 4874, *E. West* and *T. Daggy* (GH).

MELOTHRIA PENDULA var. ASPERA Cogn. in DC. Monog. Phan. 3: 587. 1881. incl. *M. pendula* var. *microcarpa* Cogn. DC. Monog. Phan. 3: 587. 1881.
M. nashii Small, Bull. Torr. Bot. Club **25:** 483. 1898.
M. microcarpa Shuttlew. ex Small, Man. S. E. Fl. U. S. 1284. 1933.

CITRUS CO.: sandy soil dominated by herbs, fruit oblong, July 12, 1962, *O. Lakela* 25162 (GH, USF); DADE CO.: glades farm lands south of Long Pine Key, common, April 23, 1952, *W. B. Robertson* 198, (GH); LEE CO.: Sanibel Island, climbing perennial of damp waste places, Feb. 23, 1954, *G. R. Cooley* 2519 (GH); PALM BEACH CO.: Kelsey City, sandy bank along ditch, Dec. 4, 1920, *Fannie Randolph* 116 (GH).

MELOTHRIA PENDULA var. CRASSIFOLIA (Small) Cogn. Pflanzenreich 4, Fam. 275, I: 88, 1916.
Melothria crassifolia Small, Bull. Torr. Bot. Club. 25: 483. 1898.

TYPE: LAKE CO.: collected in vicinity of Eustis, stems creeping on ground, moist soil, June 1-15, 1894, *G. V. Nash* (isotype, GH!).

COLLIER CO.: north of Deep Lake, route 29, Canal bank, and margin of hammock w side of the road, Oct. 1962 *G. Cooley* 9382 (GH, USF); DADE CO.: Cape Sable, April 13, 1923, *A. Harris* C23352 (GH); MANATEE CO.: ad ostia fl. Manatee, Florida, austr. occ. June 1845 legit *Rugel* 260.

ASTERACEAE

Kuhnia

Examination of herbarium and field collections leads me to conclude that *K. mosieri* is another geographic variety

of the widespread *K. eupatorioides*, and is closely related to *K. eupatorioides* var. *pyramidalis* Raf. The southern Florida population is narrowly endemic to Dade County; Shinner's (1946) citation of a Chapman specimen from Aspalaga, Fla. is apparently an error, and the plant in question is referrable to var. *pyramidalis*.

KUHNIA EUPATORIOIDES L. var. **floridana** R. W. Long, var. nov.

A typo differt foliis linearibus, minus quam 3 mm latis, plerumque minus quam 3 cm longis.

TYPE: DADE CO.: Miami, Florida, May 13, 1904, *S. M. Tracy* 9046. In Gray Herbarium.

Stems simple, up to 7 dm tall, leaves linear to less commonly oblong-entire, scabrous-pubescent above, densely resin-dotted beneath, larger blades 2-4 cm long, 1-3 mm wide, the upper leaves gradually becoming smaller. Inflorescence corymbose or corymbose-paniculate; involucres 8.5-10.5 mm high, florets 9-13, corollas 6-6.5 mm long, achenes 3.5-4.5 mm long.

Kuhnia mosieri Small, Man. S. E. Fl. 1329 and 1508, 1933.

Two names, *K. eupatorioides* var. *gracilis* T. & G. and *K. paniculata* Cass. have been applied incorrectly to slender forms of *K. eupatorioides* var. *pyramidalis* and to *K. eupatorioides* var. *floridana*.

DADE CO.: rocky pinelands between Bay Biscayne and the Everglades, *A. H. Curtiss* 1187 (GH); open grassy area, near intersection of Redlands and 308th St., Homestead, frequent in unbroken ground, Aug. 10, 1963, *O. Lakela* 26137 (USF); Sunset Dr. and SW 71 Ct., Miami, vacant lot, pineland, sandy soil, S26, T54S, R40E, Sept. 5, 1968, *G. Avery* 459 (USF).

Aster

The genus is represented in southern Florida by nine species. Small described a number of new species from this area, but examination of collections has required some nomenclatural changes.

ASTER CONCOLOR L. var. **simulatus** (Small) R. W. Long, stat. nov.

Aster simulatus Small, Bull. Torr. Bot. Club **51:** 388. 1924.

TYPE: DADE CO., FLA., Silver Palm Schoolhouse, Nov. 26, 1913, *J. K. Small* in NY Herbarium.

Small stated that this plant is related to *A. concolor* but differed by having upper leaf-blades scale-like, smaller, and more copiously puberulent bracts and involucres; *A. concolor* var. *concolor* has leaves ovate-lanceolate to lanceolate and stems silky pubescent.

BROWARD CO.: pinelands w of Haledale, Dec. 16, 1923, *J. Small* 11090, *J. B. DeWinkeler*, and *C. Mosier* (GH); DUVAL CO.: dry pine barrens near Jacksonville, Dec. 1, 1898, *A. H. Curtiss* 6434; HILLSBOROUGH CO.: ca. 1 m ne of Fletcher Ave., and Morris Bridge Rd, in fencerow, Dec. 2, 1962, *O. Lakela* 25598 (GH, USF); ORANGE CO.: dry woods, Winter Park, May 19, 1927, *F. W. Hunnewell* 10,533 (GH).

ASTER PATENS Ait. var. **floridanus** R. W. Long, var. nov.

A typo differt caulibus et foliis scabris; capitulo circa 2 cm latis.

TYPE: COLLIER CO., FLA., abundant on pine and cabbage palm islands in Big Cypress, Brown Lake, 15 mi south of Immokalee; 60-80 cm high; leaves scabrous, heads about 2 cm diameter, showy, rays pale violet, Dec. 12, 1945, *L. J. Brass*, 15780. In Gray Herbarium.

Aster fontinalis Alexander ex Small, Man. S. E. Flora 1382. 1933.

This variety is definitely related to *Aster patens*, but it represents a race that is endemic to peninsular Florida. It is separable from the typical form on the basis of scabrous stems and leaves, and larger heads.

FLAGLER CO.: west of Bunnell, tall branching, Nov. 30, 1943, *Oakes Ames* 410 (GH); near Bunnell, rays deep lilac, Nov. 30, 1943, *Oakes Ames* 406 (GH); LEON CO.: open old field pine woods, 2 mi e of Tallahassee, Nov. 4, 1955, *R. K. Godfrey* 54305 (GH); MADISON CO.: disturbed roadside sands bordering long leaf pine turkey oak woods, 4 mi w of Madison, April, 1957, *R. Kral* 4590 (GH).

ASTER TENUIFOLIUS L. var. **aphyllus** R. W. Long, var. nov.

A typo differt foliis linearibus ad subulilinearibus, deminutiis vel destitutis super; caulibus tenuibus.

TYPE: HILLSBOROUGH CO., Florida, northwest of Tampa,

south of State Route 580 and west of Rocky Creek, Dec. 24, 1962, *O. Lakela* 25610. In Gray Herbarium, isotype in USF.

A. bracei Britton ex Small, Fl. Miami 190, 1913, type, New Providence, *Britton and Brace* 394, in NY.

This variety resembles *A. tenuifolius* var. *tenuifolius* (photo, GH!) in producing stolons, in general habit, and in ecological preferences. It differs in producing smaller, much reduced linear or linear-subulate leaves that are apparently absent in upper stems; it also has smaller heads. Both varieties, however, are connected by intermediate forms. Apparently *A. tenuifolius* var. *aphyllus* represents a West Indian-Florida population segregate of the more northern *A. tenuifolius*.

BAHAMAS: Eleuthera, palmetto-land near airstrip ca 2.5 miles n of Rock Sound, 76 degrees 10 min W, 25 degrees, 52 min N common; rays white or pink, July 27, 1960, *G. Webster* and *T. Williams* 10719 (GH); Grand Bahama Island, July 1904, *G. Allen* 17 (GH); New Providence, pine barrens, in bogs, Feb. 28, 1888, *Eggers* 4311 (GH); New Providence, saline rocky flats, near Nassau, Feb. 18, 1903, *A. H. Curtiss* 84.

FLORIDA: COLLIER CO.: plentiful on pine and cabbage palm islands in Big Cypress, erect 30-70 cm, leaves somewhat fleshy, heads little more than 1 cm diam, Brown Lake 15 mi s of Immokalee, Dec. 12, 1945, *L. J. Brass* 15775; HILLSBOROUGH CO.: about 6 mi se of Tampa, weedy waste flat formerly in longleaf pine-cabbage palmetto, Oct. 28, 1960, *J. D. Ray* 10573 (intermediate to typical var.); MONROE CO.: Big Pine Key, Feb. 26, 1936, *E. P. Killip* 31621; DADE CO.: sand dunes near head of Indian Creek, opposite Miami, Nov. 22, 1912, *J. K. Small* 3879 (GH); PINELLAS CO.: sandflats near Pasadena Golf Course, Gulfport, Dec. 21-28, 1949, *R. F. Thorne* 9401 (GH); WAKULLA CO.: brackish marsh, St. Marks Wildlife Refuge, Oct. 6, 1955, *R. Kral* and *R. Godfrey* 54084.

ASTER DUMOSUS var. SUBULAEFOLIUS T. & G., Fl. N. A. 2: 128. 1841, incl. *A. simmondsii*, Small Fl. Miami 190, 200. 1913.

A. sulznerae, Small, Fl. Miami 190. 1913.

A. dumosus var. *gracilipes* Wiegand, Rhodora 30: 166. 1928.

Small's two species represent mixtures of smallish, stiff, linear-leaved forms, and larger more lax-leafy forms, judging from his annotations. The former may be referred to

A. dumosus var. *subulaefolius* for which specimens are cited below. The latter, occurring less commonly in southern Florida, may be referred to *A. dumosus* var. *coridifolius* (Michx.) T. & G.

DADE CO.: Everglades w of Peters, Nov. 20, 1916, *J. K. Small* 7922, (GH); New River canal beyond head of New River, Nov. 11-25, 1913, *J. Small* 4431 and *G. Small* (GH); Royal Palm hammock, Feb. 20, 1915, *J. K. Small* 5428 and *E. Small* (GH); Deering Snapper Creek hammock, Dec. 10, 1919, *J. Small et. al.* (GH); VOLUSIA CO.: 1 mi w of Ormond, in open field, Nov. 23, 1943, *Oakes Ames* 11 (GH).

Flaveria

The evidence for considering *F. latifolia* as representing stabilized diploid hybrids in southern Florida has been presented elsewhere (Long & Rhamstine, 1968). The correct citation for the hybrid was not given, however, and is given here for validation.

FLAVERIA × LATIFOLIA (J. R. Johnston) Rydb. (pro sp.)
(F. floridana × F. linearis)
F. linearis var. *latifolia* J. R. Johnston, Proc. Amer. Acad. Arts Sci. **39**: 289. 1903, (pro parte, including the type).
F. latifolia (J. R. Johnston) Rydb. North Amer. Flora **34**: 145. 1915. (pro parte).

Heterotheca

The transfer of *Chrysopsis* to *Heterotheca* (cf. Shinners, 1951; Wagenknecht, 1960) requires a number of new combinations and nomenclatural revisions in Florida species.

HETEROTHECA **hyssopifolia** (Nutt.) R. W. Long, comb. nov.
Chrysopsis hyssopifolia Nutt., Jour. Acad. Natural Sciences, Phil. **7**: 67. 1834.

The species was described by Nuttall from a specimen collected in "West Florida" as smooth with narrow or linear leaves. The specimens from southern Florida are not so leafy as the northern and west Florida plants, but otherwise they are very similar.

BAY CO.: coarse sand, scrub oak barren, Tyndall Field, Military Reservation, Oct. 15, 1955, *R. K. Godfrey* 54182 and *R. Kral* (GH); GULF CO.: Apalachicola, Chapman Herb. 1959, dry pine barrens,

Sept. 18, 1895; HARDEE CO.: common on dry prairie; apex of bracts often purplish; rays and disk yellow, about 3 mi e of Zolfo Springs, July 23, 1949, *L. J. Brass* 20613 (a good example of the south Florida race) (GH); HERNANDO CO.: scrub-oak and sand ridge, 4.5 mi n of Brooksville, Oct. 16, 1950, *R. K. Godfrey* 50858 (GH); INDIAN RIVER CO.: dry pine barrens, *A. H. Curtiss* 1364 (GH); dry pine barrens, Melbourne, Aug. 3, 1896, *A. H. Curtiss* 5736.

HETEROTHECA HYSSOPIFOLIA (Nutt.) R. W. Long var. **subulata** (Small) R. W. Long, stat. and comb. nov.

Chrysopsis subulata Small, Man. Fl. S.E. U.S. 1338. 1933.

TYPE: between Avon Park and Sebring, Florida, *J. K. Small* 11495, in NY Herb.

The variety is similar to the typical one except the bracts of the involucre are prolonged and have conspicuous, curved, or bent, caudate tips. The leaf blades are somewhat broader than the typical plant, but they are very similar otherwise. Apparently *H. hyssopifolia* var. *subulata* is another of the endemic races of central Florida, although specimens may be found farther north and south in the state.

FRANKLIN CO.: pine savannah ¼ mi south of Ochlockonee River by U. S. 319, T 6S, 3W, Sec. 2, Oct. 3, 1954, *J. B. Morrill* and *R. K. Godfrey* (GH); HIGHLANDS CO.: scrub between Avon Park and Sebring, July 17, 1924, *J. K. Small, J. W. Small,* and *J. DeWinkeler,* (topotype) (GH); INDIAN RIVER CO.: dry pine barrens near Eau Gallie, *A. H. Curtiss* 1364; ORANGE CO.: dry pine barrens, July 7, 1902, *A. Fredholm* 5356; POLK CO.: pine palmetto flatwoods, near the southern end of Crooked Lake, Aug. 3, 1955, *R. K. Godfrey* 53835 and *R. Kral* (GH).

HETEROTHECA GRAMINIFOLIA (Michx.) Shinners, var. **traceyi** (Small) R. W. Long, stat. and comb. nov.

Chrysopsis traceyi Small, Fl. S. E. U. S. 1182, 1339. 1903.

TYPE: Tracy, Pls. Gulf St. 7713. In herb. NY.

This variety is distinguished by its longer ray flowers that are about 1 cm long, and by lower leaf blades that are much elongated. Otherwise, it is similar to the typical variety; *H. graminifolia* var. *traceyi* is endemic to peninsular Florida, especially southern Florida.

COLLIER CO.: Big Cypress, 6 mi w of Miles City, frequent on low pinelands, leaves silvery, flower heads up to 3.5 cm in diam, florets a rich yellow, Jan. 14, 1946, *L. J. Brass* 15883 (GH); DADE CO.: Krome hammock near Homestead, April 11, 1924, *J. K. Small* 11,162,

J. DeWinkeler, C. Mosier, (GH); FLAGLER CO.: south of Bunnell on Route 4, on banks of railroad ditch in full sun, heads up to 3.5 cm across, all plant prevalently dwarf, Dec. 6, 1943, *Oakes Ames* 233; MONROE CO.: Big Pine Key, rays bright yellow, 6-10 mm long, pine-palm woods northeast of Inn, Nov. 25, 1951, *E. P. Killip* 41459 (GH).

HETEROTHECA **floridana** (Small) R. W. Long, comb. nov.

Chrysopsis floridana Small, Fl. S. E. U. S. 1183, 1339. 1903.

Chrysopsis mariana var. *floridana* (Small) Fern. Rhodora **39**: 455. 1937.

TYPE, Pl. Gulf St. Tracy 7344, Bradenton, Fla. In NY herb. Isotype GH!

This is a distinctive species with heavy pubescence, tomentose leaves that are spatulate near the base and ovate to ovate-lanceolate near the top of the stem. It is endemic to Florida, apparently to the lower Gulf coast and presumably in southwestern Florida. The species appears to be related to *H. scabrella* T. & G. but since so few collections have been made, it is not possible to place the taxon definitely in relation to other species of the genus.

HILLSBOROUGH CO.: near Ruskin, in openings of white sand in scrub oaks and *Ceratiola,* low flat terrace south of Little Manatee River Bridge, rays golden yellow, glandular on phyllaries and peduncles. Plants suffrutescent, perennial, Nov. 11, 1961, *O. Lakela* 24826 (GH, USF).

Cirsium

Cirsium vittatum was described by Small as differing from *C. pinetorum* (= *C. horridulum* Michx.) in having narrow, elongated, basal leaf blades which are not pinnatifid, and anthers twice as long as the filaments. The plants are often smaller than the typical variety, and are endemic to southern Florida. Although corollas are usually cream-colored or yellowish, they may be purplish. The two races apparently hybridize and intergrade freely, and may occur together in the same area. A third taxon, *C. nuttallii* (DC.) A. Gray, morphologically distinct with heads not involucrate, also occurs in southern Florida.

CIRSIUM HORRIDULUM Michx. var. HORRIDULUM

Cirsium smallii Britton, Britt. & Millsp. Bahama Fl. 458, 1930.

Carduus smallii (Britt.) Ahles, Jour. Elisha Mitchell. Sci. Soc. **90**: 173. 1964.

DADE CO.: southwest of Homestead, Everglades National Park, common throughout, Mar. 30, 1963, *O. Lakela* 25736 (leaves heavily tomentose) (USF); HILLSBOROUGH CO.: seasonally wet pineland & palmetto 2.4 m nw of Trout Creek, April 17, 1964, *O. Lakela* 27156 and *A. Burdette* (USF); MONROE CO.: Big Pine Key, common in flat pinelands, growing with *C. vittatum*, Nov. 13, 1964, *O. Lakela* 27897 (USF); PINELLAS CO.: cleared roadside largely of white sand, Jct. US 19, and Fla 52, May 23, 1963, *O. Lakela* 26015 (USF).

CIRSIUM HORRIDULUM var. **vittatum** (Small) R. W. Long, stat. and comb. nov.

Carduus vittatum Small, Bull. N. Y. Bot. Gard. 3: 439. 1905.

Cirsium vittatum Small, Man Fl. S. E. U. S. 1483. 1933.

COLLIER CO.: Big Cypress, Fahkahatchee, south of Miles City, glade and cypress margin, Mar. 6, 1965. *O. Lakela* 28197 and *R. W. Long* (intermediate between *C. horridulum* and *C. vittatum*) (USF); MONROE CO.: Big Pine Key, Watson's hammock and surrounding pineland, Aug. 6. 1966, *R. W. Long* 2099 (USF); Everglades National Park, near Homestead, *G. R. Cooley* 9419, *et. al.* Oct. 16, 1962 (GH); Everglades National Park, southwest of Homestead, outcrops of oolite, common, Mar. 30, 1963, *O. Lakela* 25720 (USF).

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